

Team Project Group 27-22

Freebees

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1. Introduction

1.1. Problem Statement

Every year, thousands of students temporarily resided in the local neighborhood departing from the University of Birmingham must get rid of used items and furniture as they are not able to carry these items home. As a result, loads of used goods and furniture, along with other waste, were left on the street during summer. Local neighborhood Selly Oak, for instance, has been mocked as "Smelly Oak" as terrible smell evolved during July heats. 12

1.2. About team

We are Freebees, a group of Computer Science Students at the University of Birmingham.



Picture 1. Logo of the project.

As software engineers, we strive to provide software solutions that could address real world issue as outlined above. By producing a web app that aids the community to give used items a second life for free, we hope to achieve: (1) Reducing waste, (2) Promoting sustainability, and (3) Lessening cost-of-living.

1.3. Contribution to the community/university

- 1. UNESCO Sustainability goals
 - a. Sustainable cities and communities (Goal 11)
 - b. Responsible consumption and production (Goal 12)
 - c. Climate Action (Goal 13)
 - d. No poverty (Goal 1)
- 2. Engaged University / University-Community engagement

1.4. Deliverables

A web app that could address real world issue with the following components: interactive website (frontend), server, application logic and database (backend)

1.5. Future development

Further development into a mobile application is considered (out of scope)

¹ Haynes, J. (2019, July 4). 'Smelly Oak' shame as rubbish rots in streets as students head home for the summer. Birmingham Live. https://www.birminghammail.co.uk/news/midlands-news/smelly-oak-shame-student-summer-16532137

² Tyler, J. (2021, July 3). *100 TONS of waste collected as students head home for summer - and the rubbish 'keeps on coming'*. Birmingham Live. https://www.birminghammail.co.uk/news/midlands-news/100-tons-waste-collected-students-20963660

2. Ranking

2.1. Criteria

As a team, we decided on the following criterias to rank the S1 submission:

Mockups:

- Link to concept (How well the feature links to the app's concept)
- Innovation of feature mocked up (How innovative the mockups compared to what already exists on the market)
- Aesthetics of the mockup (How good does the mockup look)

Personas:

- Believe-ability of personas (How real is the data used to design the persona)
- Usefulness and Relevance of personas (How well does the persona represent users of our platform)
- Details of the personas (How detailed the breakdown of personas are, does it include a Bio, the main pains and motivations...)

Kanban feature cards:

- Details level in Kanban cards (Could anyone in the team start working on the given Kanban card)
- Reference in Kanban cards (How referenced is the kanban card, Does it mention the feature)

Git commits:

Clarity of commit message and proof of commit to correct repo

2.2. Ranking of submissions 1

Rank	Name	Criteria & Feedback
1st	Hugo Biais	Mockups: The charity feature is an essential part of our platform. The mockup is innovative and shows a special interface for charity members as well as a charity page to create the link between charity members and regular members. The mockup is simple, concise, and well-designed. Persona: Interviewed someone to create his persona and got real detailed data. The persona represents the student item receiver, a key user of the platform. Kanban card: Card well designed, without many details but understandable by anyone in the team. Git commit: Clear and concise commit message and correct proof of commit.
2nd	Daniel Dubrov	Mockups: The chat feature plays a key role in the relation between users of the platform. Mockup is well-documented and

		realistic, as well as aesthetically pleasing (hand-drawn version and figma version). Resembles what a well-engineered chat feature would look like. Persona: The persona data is very believable, detailed and represents a relevant user of the platform: The low income multichile mother. Kanban card: Card well designed, good link to the designed mockup, well assigned. Excellent to have added tasks. Git commit: Clear and concise commit message and correct proof of commit.
3rd	Man Cheung	Mockups: The item listing feature shows the user what item he/she has posted and recommends users who are interested in these items. Mockup is very realistic and detailed, resembling what one might find on an e-commerce website. Persona: Believable and detailed mockup that helps us imagine the situation an international student might be in and why he would use our platform. Kanban card: 2 detailed Kanban cards with different status (shows understanding of features of a Kanban board). Design linked inside cards, facilitate link with the mockup. Git commit: Clear and concise commit message. Correct proof of commit.
4th	Cheuk Yu Lam	Mockups: "Publish item" is the most important feature of our platform. Well-designed mockup with pop-up window and icons that make it look very realistic. The top navigation bar also demonstrates the will to have consistency in the mockup, Persona: Detailed and believable persona that doesn't conflict with others and shows a new kind of user: The mother who's moving house and wants to get rid of items. Kanban card: Great kanban card, shows details and sections for the cards. No design inside the card. Git commit: Clear and concise commit message. Correct proof of commit.
5th	Mohammed Bu Khamsin	Mockups: "Search" plays a key role in how users will be able to find new items, with both a grid view, a map view and filters, showing the resemblance with Google Maps. The mockup is consistent, aesthetically pleasing. There are just a few design problems with buttons. Persona: An item receiver with a new precise motivation: "Wanting to refurbish their house". It's detailed, coherent with the template, realistic. Kanban card: Good card, might need more details concerning the feature and also need to be assigned to the right person. Git commit: Clear and concise commit message. Correct proof of commit.

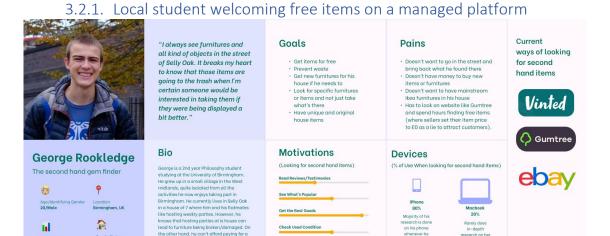
6th	Yihong Diao	Mockups: "The issue history" feature is a good idea but not documented well enough and it's not entirely clear where this functionality would be accessed from. The mockup is aesthetically pleasing and clear. The rate feature only shows the design where it would have been better to have it implemented in the User Interface. Persona: Interesting persona. Might not represent a large group of users though. The template is respected, and the data is believable and well documented. Kanban card: The Kanban card is detailed and correctly assigned. Git commit: Clear and concise commit message. Correct proof of commit.
7th Yumo Deng The Yu		Persona: Template isn't respected like the others. The bio isn't clear and needs clarification. This persona seems too generic and not realistic. Kanban card: Design is uploaded to kanban card, with additional details. The name given to the kanban card might be a bit too

3. Concept

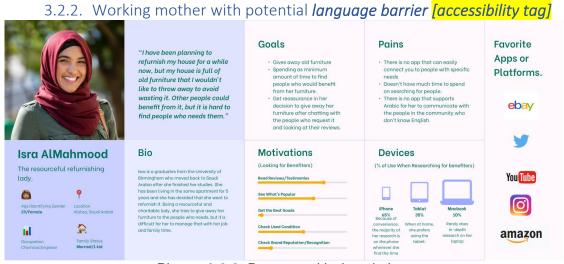
3.1. Concept description

Freebees is a web application and a handy platform for locals to give away and take second items for free with aims to minimize waste and promote sustainable living. During the cost-of-living crisis, the app should also be able to help people to save money. The following personas and mockups depict potential users of the app and provides a look-and-feel of the application itself.

3.2. Personas



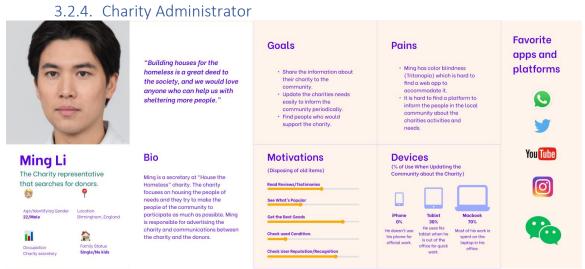
Picture 3.2.1. Persona with description.



Picture 3.2.2. Persona with description.

3.2.3. Exchange student who stays at Birmingham for a brief period only Favourite apps and platforms Goals Pains Only stay at Birmingham for a limited amount of time The price of household items/furniture is relatively high in the UK The amount of waste "We can't live wastefully · Try to reduce waste by much longer. Think sustainable to make our future acquiring second hand items to be used during his items to be used during his short stay in Birmingham • Spend as little money as possible to minimise cost of living • Give away the items when he leaves for Thailand generated for buying brand new products in bundle (e.g, cutlery are using sold in a family set for 4 persons) Bio **Motivations Devices** Niwit Kunchai The waste tackler (For second hand items) (% of Use) Niwit is an inbound exchange student from Thailand to the University of Birmingham, where he will spend one semester Uning at university accommodation. As a waste management major, he has been working in various initiative tackling human waste back in Thailand, He does not mind to use second hand freebies at all. During his three-month journey at Birmingham, Niwit feels like he should probably do more recycling here and would be happy to give and take to and form other people. ebay ****** Check Used Condition**

Picture 3.2.3. Persona with description.



Picture 3.2.4. Persona with description.



Picture 3.2.5. Persona with description.

3.2.6. Working mother with a relatively low-income background and *dyslexia* [accessibility tag]



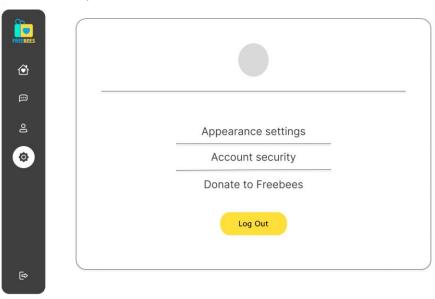
Picture 3.2.6. Persona with description.



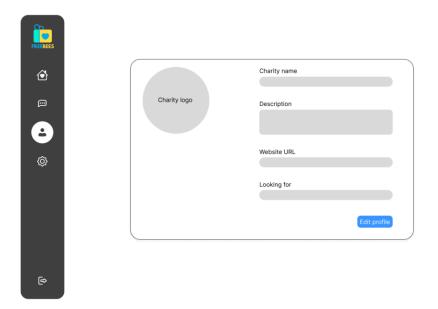
Picture 3.2.7. Persona with description.

3.3. Mockups

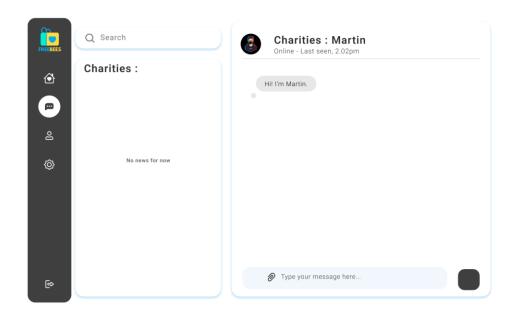
3.3.1. Charity User View



Picture 3.3.1. Settings view for charity user.

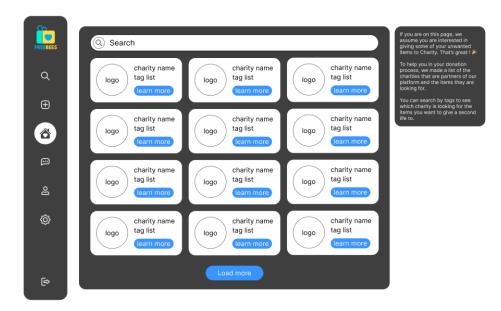


Picture 3.3.2. Profile view for charity user.

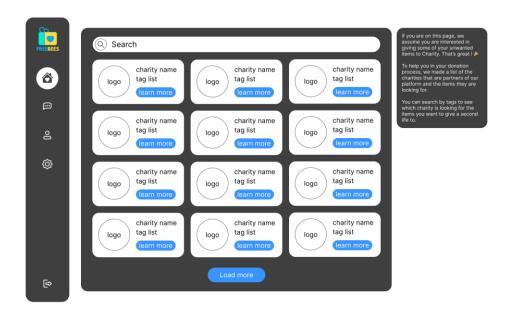


Picture 3.3.3. Chat view for charity user.

3.3.2. Charity Page (as viewed by non-charity user)

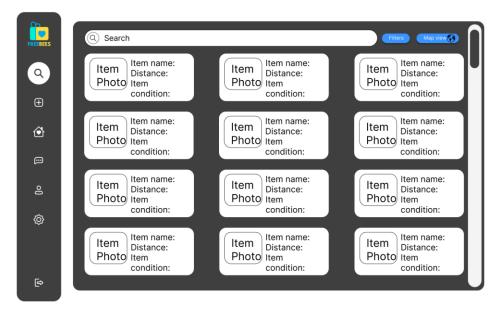


Picture 3.3.4. General charity page view for users.

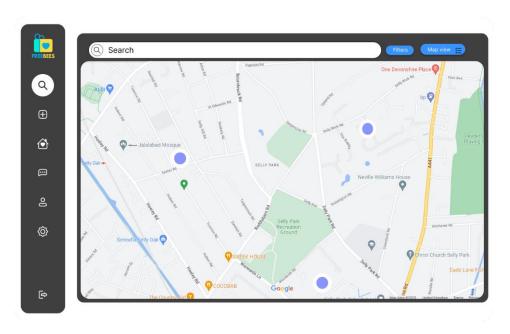


Picture 3.3.5. General charity page view for charity users.

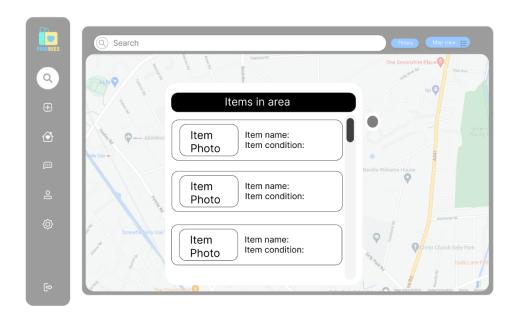
3.3.3. Search



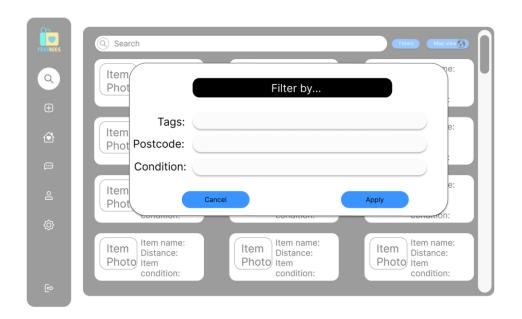
Picture 3.3.6. Search functionality concept.



Picture 3.3.7. Map view search functionality concept.

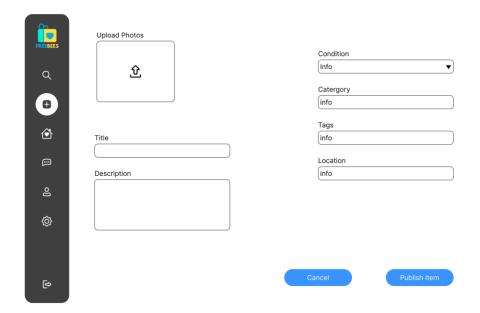


Picture 3.3.8. Map item list pop-up window view.

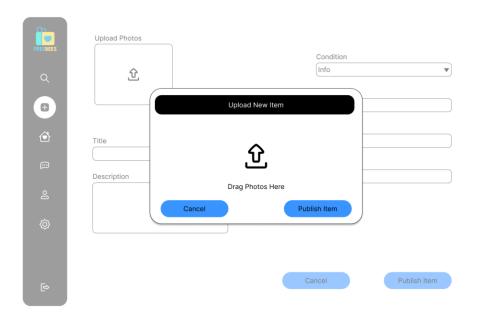


Picture 3.3.9. Filter pop-up functionality view.

3.3.4. Publish Item

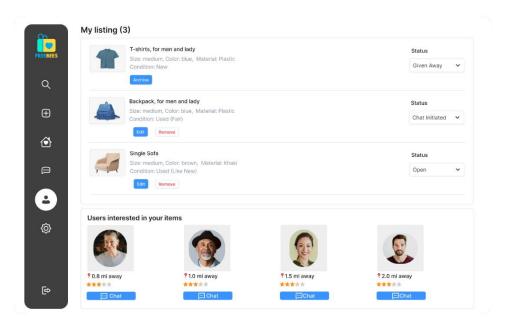


Picture 3.2.10. Items publish window view.

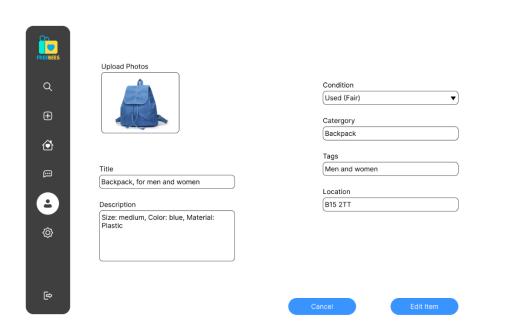


Picture 3.2.11. Item upload pop-up window.

3.3.5. Item Management

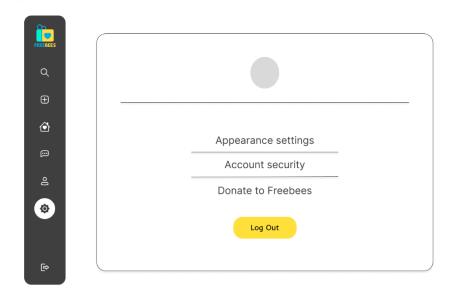


Picture 3.3.12. Item management view concept.

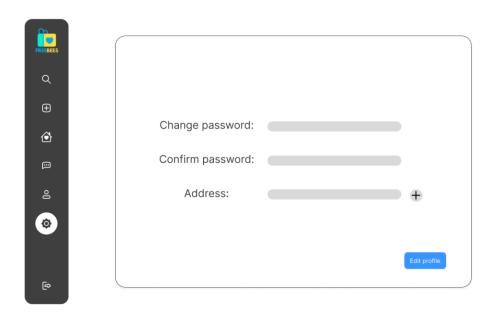


Picture 3.3.13. Item editing window concept.

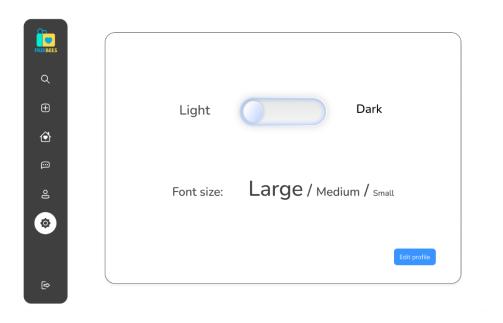
3.3.6. Settings and User Profile



Picture 3.3.14. Settings view.

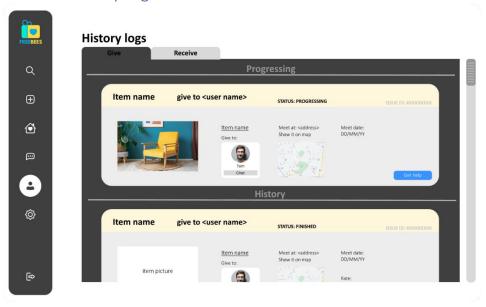


Picture 3.3.15. Security settings view.

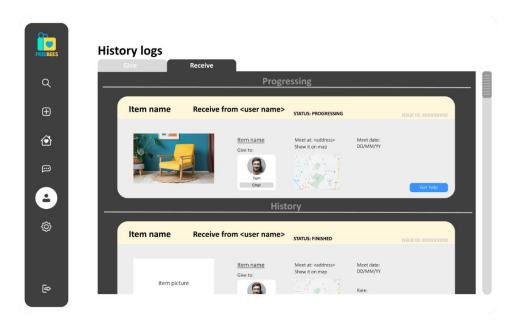


Picture 3.3.16. Appearance settings view.

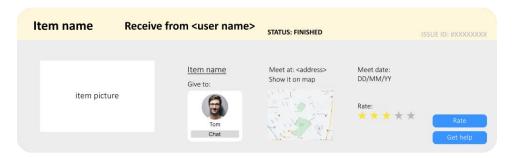
3.3.7. User History Log



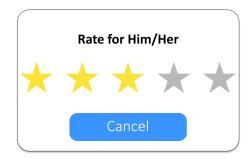
Picture 3.3.17. History logs Give page view.



Picture 3.3.18. History logs Receive page view.

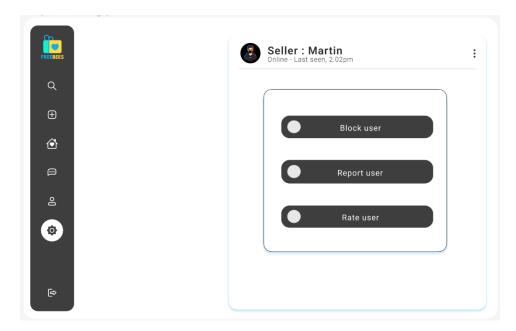


Picture 3.3.19. Single History log item view.

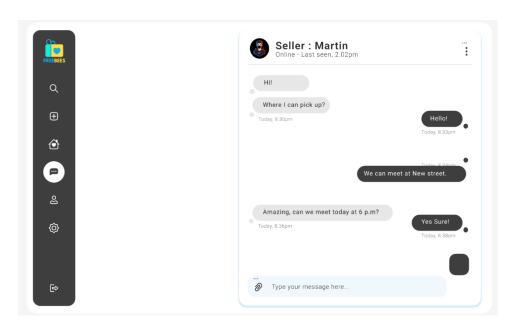


Picture 3.3.20. Rate user pop-up window view.

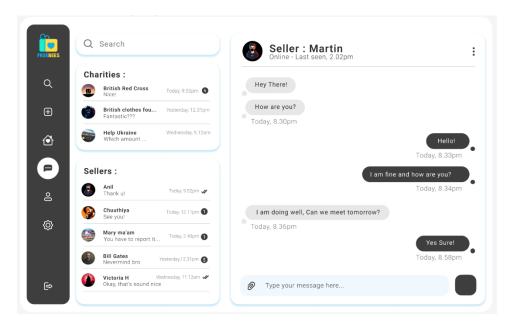
3.3.8. Chat



Picture 3.3.21. Chat additional settings in pop-up window.



Picture 3.2.22. Chat pop-up window concept.

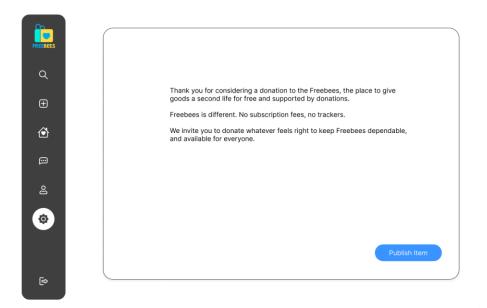


Picture 3.2.23. General chat view.

3.3.9. Donation

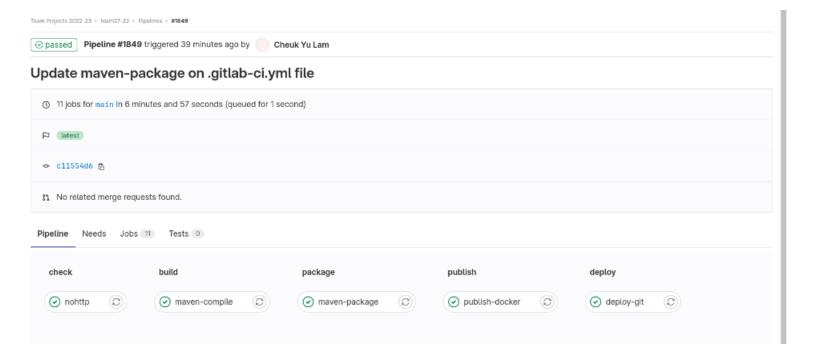


Picture 3.2.24. Donation window view.



Picture 3.2.25. Donation success window.

4. Cl pipeline setup



Picture 4.1 Gitlab pipeline setup.

```
#uncomment this once the $RSA $VM_USER@$VM are set in the repo - Setting -> CI/CD -> variables
68 #$RSA should be a private key file, $VM_USER is the VM user name (e.g. root or ec2) and $VM is the IP address of the state of the st
69 #this assumes docker and SSH is installed on the $VM
70 deploy-git:
            image: alpine:latest
            stage: deploy
            when: on_success
            before_script:
                - chmod og= $RSA
                - apk update && apk add openssh-client
                - ssh -o StrictHostKeyChecking=no -i $RSA $VM_USER@$VM "docker compose -f ~/team-project-deployment/src/main/do
                - ssh -o StrictHostKeyChecking=no -i $RSA $VM_USER@$VM "docker rm -f $(docker ps -a -q) || true"
                - ssh -o StrictHostKeyChecking=no -i $RSA $VM_USER@$VM "docker volume rm $(docker volume ls -q) || true"
                - ssh -o StrictHostKeyChecking=no -i $RSA $VM_USER@$VM "rm -rf ~/team-project-deployment || true"
                - ssh -o StrictHostKeyChecking=no -i $RSA $VM_USER@$VM "docker login -u $CI_REGISTRY_USER -p $CI_REGISTRY_PASSW
                - ssh -o StrictHostKeyChecking=no -i $RSA $VM_USER@$VM "docker pull ${CI_REGISTRY_IMAGE}:latest"
                - scp -o StrictHostKeyChecking=no -i $RSA -r . $VM_USER@$VM:~/team-project-deployment
                 - ssh -o StrictHostKeyChecking=no -i $RSA $VM_USER@$VM "sed -i '5s|teamproject|$CI_IMG|' ~/team-project-deploym
                - ssh -o StrictHostKeyChecking=no -i $RSA $VM_USER@$VM "docker compose -f ~/team-project-deployment/src/main/do
```

Picture 4.2. Gitlab .yml file.

Access to .yml file: gitlab-ci.yml (UoB account required)

5. Meeting diary

Week 1: Meeting 1 (Team introductions)	
Date	3 Feb 2023 - 11:30-12:30
Venue	Study Place next to Avon Room
Attendees	All members
Agenda	 Introduce each other Learn how experienced each of us are Choose a communication platform Choose a consistent time to hold our meetings
Discussions	Each of us introduced themselves
Decisions made	 We choose Discord as our main communication platform and we made a server for the team We choose Tuesdays from 6-8 PM for our weekly meetings

Week 1: Meeting 2 (Team Meeting)	
Date	7 Feb 2023 - 18:00 - 20:00
Venue	Library, Room number 223
Attendees	All members
Agenda	Brainstorm ideasAssess and critic ideasVote for the idea to develop
Discussions	 Tutor meeting time? On Thursday We wait for the TA response. DONE! Thursday 13:30 PM Ideas Mockups platform

	 Figma Features (loosely): Profile page Add item / delete Searches items Exchange Cha Map viewer
Decisions made	We voted to develop the "Exchange items platform" idea with 7/7 votes

Week 1: Meeting 3 (Tutor Meeting)	
Date	10 Feb 2023 - 11:40 - 12:00
Venue	CS building, Room 217
Attendees	All members
Agenda	Ask about our ideaAsk about submission
Discussions	We described our idea to the TA
Decisions made	Idea approved by TA

Week 1: Meeting 4 (Online Meeting)	
Date	11 Feb 2023 - 14:20 - 16:00
Venue	Discord Voice Chat
Attendees	All members
Agenda	Specify featuresAssign features to membersDiscuss personasAssign personas

Discussions	 Aim of our app Specification of how the features would work Assigned the features between us
Decisions made	Assignment: item management: Adding page (Catrin) List management page (Manni) Searching: (Hugo and Mohammed) receiver and giver and charity map view Chat (Daniel) Settings (Yumo) Log out Appearance settings Personal profile Rating Profiles system and history logs (Yihong) Personas were discussed later for time restrictions

Week 2: Meeting 5 (Spontaneous Meeting)	
Date	13 Feb 2023 - 13:00 - 15:15
Venue	Library Lounge
Attendees	All members
Agenda	Discuss personasAssign personas
Discussions	 Making 7 ideas for personas Find a suitable template for personas Clarity on the charity feature
Decisions made	Each person assigned an idea for a persona

 Adding a new account type, charities

Week 2: Meeting 6 (Tutor Meeting)	
Date	13 Feb 2023 15:30 - 16:00
Venue	CS building, Room 118
Attendees	All members
Agenda	 Ask if personas ideas are good for the submissions Ask about mockups
Discussions	 We presented our personas ideas to the TA We showed a drawn mockup to the TA to see if it is enough
Decisions made	Personas ideas are goodMockup is good

Week 2: Meeting 7 (Team Meeting)	
Date	14 Feb 2023 18:00-20:00
Venue	Library, Group Study Room 6
Attendees	All members
Agenda	 Discuss Mockups people worked on Discuss personas people worked on All members sign up in Git
Discussions	Mockup Search: • Item name

	 condition Publish item: Put background behind pop up Item list: "move to cart" -> "chat" Recommendation -> who might be interested Chat: Remove the price Profile: History log: No chat record, link to pass the item Persona Brand Affiliation -> Favourite Apps or Platforms Motivations: Read Reviews/Testimonies See What's Popular Get the Best Goods Check Used Condition Check Brand Reputation/Recognition
Decisions made	 Everyone further works on their mockups to polish them Everyone uses the personas template we choose Everyone signed to Git before meeting has finished

Week 4: Meeting 9 (Tutor Meeting)	
Date	20 Feb 2023 - 15:30 - 16:00
Venue	CS building, Room 225
Attendees	All members
Agenda	 Showcase mockups to the TA Showcase personas to the TA Ask about CI/CD

Discussions	 All members explained their mockups to the TA Asked about deleting/merging personas TA mentioned we should start working on code
Decisions made	 Discuss personas in next team meeting Discuss program infrastructure and implementation next team meeting

Week 4: Meeting 10 (Team Meeting)	
Date	21 Feb 2023 - 18:00 - 20:00
Venue	Library, Room 222
Attendees	All members
Agenda	 Finish ranking form Decide on personas for M1 Finalise mockups for M1 Discuss meeting times to another day Finish Git pipeline setup Do S2 task allocation Set deadline for submission tomorrow
Discussions	Profile page mockup: Add "History logs" button to profile page Add "wanted item tags" to profile page Add "Postcode" into profile page Personas to include: Diverse devices to reflect the need Make one persona dyslexic Make one persona color blind Meeting times: Make them 2 one hour meetings instead of one meeting

	We start the new meeting next week Working on pipeline Kanban cards: Figuring out labels S2 task assignments
Decisions made	Mockups: Add the things listed above Try to make your mockup as consistent in theme as the overall palette Personas: Make sure we have some personas with disabilities Everyone should diversify their personas device usage Changed the two old personas preferring laptop Modify Yomu's persona to make it the charity member based in the UK We are keeping our 7 personas with the modification New meetings schedule: Tuesday at 18:00 to 19:00 Thursday at 11:00 to 12:00 Pipeline line is ready Kanban cards: Everyone should make a label for their feature Make 3 (or more) kanban cards for your feature with its label Have 3 labels: "front-end", "backend", "database" Assign yourself to those cards S2 tasks assignments: Continue with your features in S2 Log in, log out, profile & settings (Yumo) User history (Yihong) Search features (Mohammed) Publish item and Donation page (Catrin) Item list and item management (Manni)

- o Chat (Daniel)
- Charity features (Hugo)

Task Allocation for M1 submission:

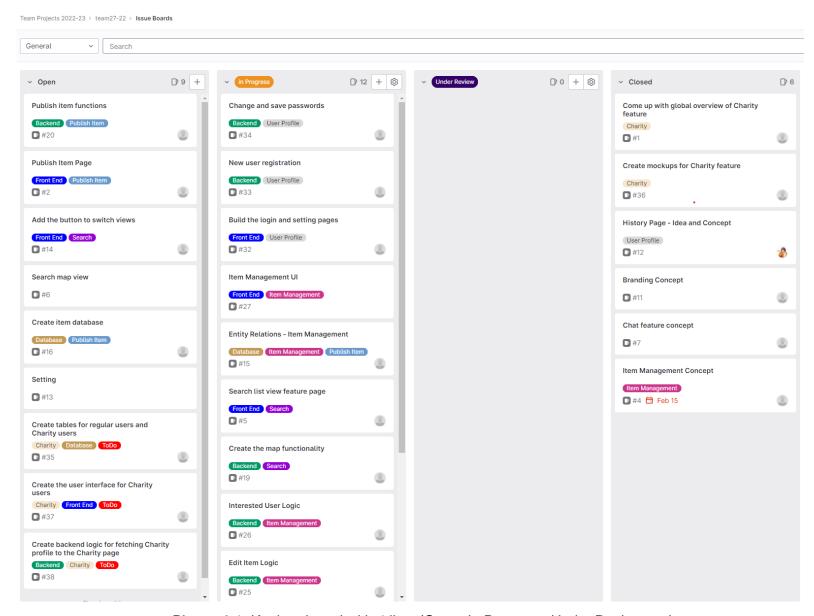
- Ranking Table, Add more stuff Charity mockup (Hugo)
- Description (Manni)
- CI pipeline (Catrin)
- Mockup, add button (Yumo)
- Persona modification (Mohammed)

Write "finished" in your figma file name so Daniel knows he can export.

Deadline to finish work is Wednesday, the 22nd, at 12:00 (Daniel submit)

6. Task allocation and planning

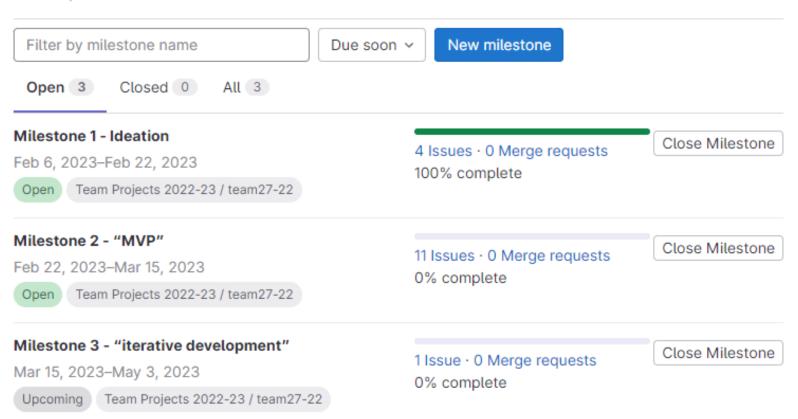
6.1. Kanban board



Picture 6.1. Kanban board with 4 lists (Open, In Progress, Under Review and Closed)

6.2. Scheduling and Milestones

Team Projects 2022-23 > team27-22 > Milestones



Picture 6.1. Listview of milestones to keep track of the progress